Index to InTech, Vol 33, 1986

PUBLISHED ARTICLES

Article list	Month/Page
Adaptive Control: Examined More, Used Less	1/9
Instrument Progress: A Tale of Two Cities	1/37
Distributed Control: We Like It Better . . . But Why?	1/43
Distributed Programmable Logic Controllers: A Case History	1/49
Advanced Control Algorithms: Beware of False Prophecies	1/55
Promoting Transnational Technology Transfer and Innovation: The Western European Approach	1/71
On-Stream Analyzers: Using the Signals Once You Have Them	2/7
Control System Engineering: Have We Gone Wrong?	2/27
On-Stream Analyzers: Handle with Kid Gloves	2/39
Remote and In-Situ Composition Analysis: Have Your Cake, Eat It Too	2/45
Pressure Relief Valves: Some Selection Guidelines	2/41
Solving a Tough Valve Problem: A Power Plant Case History	2/55
Fed-Batch Processing: Opportunities for Control	3/9
Process Control Computer Systems: Spend Money, Make Money	3/31
Batch Operator Consoles: Now Praise We All Famous MMIs	3/47
Direct Temperature Rate Control Improves Reactor Yield	3/53
Model-Based Approaches to Instrument Failure Detection	3/59
Industrial Data Communications: MAP and the Process Industries	4/9
Manufacturing Automation Protocol: How Should ISA Respond?	4/9
Control Engineers Need To Learn More About Industrial Communications	4/10
An Industrial System Supplier's Perspective on the Impact of Local Area Network Standards	4/14
International Joint Ventures: Gaining Ground in the Global Market	4/16
Artificial Intelligence: Its Impact on the Process Industries	4/33
AI: Can Performance Match the Promise?	4/45
Developing An Expert System for Process Fault Detection and Analysis	4/51
Batch Reactor Control: Could An Expert Advisor Help?	4/57
North Coast Conference: Smorgasboard for the Instrumentation Professional	5/9
Is It Really Do-It-Yourself Time Again?	5/21
PC's: Moving Toward Integration	5/29
Personal Computer Monitoring System Improves Operations Economics	5/35
Local Work Station Concepts in a Small Distributed System	5/41
Expert Systems, Intelligent Devices, Plantwide Control, and Self-Tuning Algorithms: An Update on the ISA/86 Technical Program	5/69
Preview of Technical Programming at ISA/86	5/70
Electronic Data Base Searching	6/9
Wally and the Beave Automate Reactor Startups	6/27
Wave-Based Sensor Technologies: User/Vendor Harmony Improves	6/37
Scanning Electron Microscopy: A Tool for All Technologies	6/43
Liquid and Gas Process Streams Analyzed by a Single FTIR System	6/49
Online Wear-Particle Monitoring Based on Ultrasonic Detection	6/53
MAP and the Process Industries: Charting a New Course?	7/9
Industry. It's Broke. Fix It!	7/31
No Widespread Changes Noted in Safety/Reliability Instrumentation	7/45
Apply Risk Analysis to Identify and Quantify Plant Hazards	7/49
A Practical Approach to Expert Systems for Safety and Diagnostics	7/53
Chatter-Free Relief Valves	7/59
Bringing Thermography Inhouse: A Lot More Than What Meets the Eye	8/9
The Business of Instruments	8/31
Thermocouples and RTD's: A Controversy Continues	8/43
Endo/Exo Batch Reaction Requires Complex Temperature Control	8/47
Transpiration Radiometer in Fire Characterization	8/55
Thermowell Standardization	8/61
ISA/86: Hard Sell with a Soft Shell	9/11
Principles and Prospects for Continuous-Wave Ultrasonic Flowmetering	9/14
Retrofit Doesn't Necessarily Mean Upgrade	9/35
Will You Be Replaced by a Knowledge Base?	9/41
Upgrading and Retrofitting: Where the Action Is	9/51
Building Performance Indices: Raw-Data Distillation for Process Optimization	9/55
Applying PLCs and PCs in Offshore Platform Safety Shutdown Systems	9/61
Hierarchical Diagramming Communicates Control-System Design Concepts	9/67
Integrated Automation for Pulp and Paper Mills	9/73
Adapting Expert Systems to Simulation Training of Process Operators	9/79
The Expanding Use of Personal Computers in Batch Chemical Process Control	9/83
Solar Photovoltaic Power Supplies	9/87
Instrumentation '86: Emerging Technologies Secure a Foothold on the Process Plant Floor	9/203
An Industry Overview: An Informal Discussion with Dr Henry R Linden, ISA/86 Keynote Speaker	9/208
Why MAP Makes Sense for the Process Industries: An Interview with Michael A Kaminski, ISA/86 MAP Symposium Keynote Speaker	9/212
Reliability: More Materials Than Methods	10/9
Working with Our Vendors To Attack the Causes of Maintenance	10/33
Ensuring Instrument Reliability without Overkill: Where Users Draw the Line	10/37
pH Titration Curves—Trick or Treat?	10/43
Designing Fail-Safe Systems with Solid-State Instruments	10/51
Establishing Fault Tolerance in Critical Process Control	10/57
European Reflections on Advances in Process Control and Automation	11/9
Ave Atque Vale	11/23
Final Elements: Final Frontier	11/33
Non-Traditional Final Control	11/35
The Critical Flow Limit and Pressure Recovery Factor for Flow Control	11/37
Control Valve Seat Leakage	11/41
Recommended Maximum Valve Noise Levels	11/47
The Year in Review: A Report by 1986 President Thomas J Harrison	11/71
Fluid Dynamics: So Familiar, So Obscure	12/9
The Capital Spending/Process Control Instruments Enigma	12/25
Obstructionless Flowmeters: Smooth Sailing for Some, Rough Passage for Others	12/33
All-Passive Fiber-Optic Pressure Sensor	12/39
Smart Digital Pressure Transmitters for Innovative Tank Gauging	12/45
Serving Member Needs in a Changing World	12/67

AUTHOR INDEX

Author index	Month/Page
Allmendinger, G	4/45, 5/29
Ball, K E	6/43, 7/45, 8/43, 9/51, 10/9, 11/33, 12/9
Barney, F W	6/49
Barsamian, J A	3/31
Baur, P S	6/37, 7/9, 8/9, 9/11, 10/37, 11/9
Belsley, K L	12/39
Bhandara, V A	9/55
Bialkowski, W L	2/27
Blahut, N W	9/79
Blaiklock, P M	9/83
Blume, D	12/45
Borden, G	11/41
Boykin, R F	7/49
Chintappalli, P S	5/35
Cho, C H	5/69
Daily, J N	8/61
Damsker, D J	4/10
Davis, M A	10/57
Douvry, P S	8/61
Emerson, G B	2/51
Faber, D M	1/49
Fagerlund, A C	11/47
Filho, L S	9/61
Finkel, V S	9/61
Fisher, D A	2/55
Fisher, T G	10/51
Fortin, D A	4/51
Garrick, B J	7/49
Goodman, J	12/39
Gupta, R M	9/73
Harrison, T J	11/71
Hirschfeld, T	2/45
Hogley, J R	9/41
Hopper, H	10/33
Huber, D R	12/39
Kazarians, M	7/49
Korncoff, A R	9/41
Kosar, R P	9/79
Krigman, A	1/9, 1/37, 1/43, 2/7, 2/39, 3/9, 3/47, 7/31
Loflin-Beres, Lori A	9/87
Longenbaugh, Randy	8/55
Longwell, E J	8/47
Mardon, J	11/23
Marsh, C E	5/41
Mara, R	5/55
Matthews, L	5/55
McCarthy, J J	4/14
McMahon, T K	12/25
McMillan, G K	1/55, 3/53, 6/27, 10/43
Myers, J	12/45
Nisenfeld, A E	4/57, 5/21
Nemarich, C P	6/53

Index to InTech, Vol 33, 1986

PUBLISHED ARTICLES

Article list	Month/Page
Adaptive Control: Examined More, Used Less	1/9
Instrument Progress: A Tale of Two Cities	1/37
Distributed Control: We Like It Better . . . But Why?	1/43
Distributed Programmable Logic Controllers: A Case History	1/49
Advanced Control Algorithms: Beware of False Prophecies	1/55
Promoting Transnational Technology Transfer and Innovation: The Western European Approach	1/71
On-Stream Analyzers: Using the Signals Once You Have Them	2/7
Control System Engineering: Have We Gone Wrong?	2/27
On-Stream Analyzers: Handle with Kid Gloves	2/39
Remote and In-Situ Composition Analysis: Have Your Cake, Eat It Too	2/45
Pressure Relief Valves: Some Selection Guidelines	2/41
Solving a Tough Valve Problem: A Power Plant Case History	2/55
Fed-Batch Processing: Opportunities for Control	3/9
Process Control Computer Systems: Spend Money, Make Money	3/31
Batch Operator Consoles: Now Praise We All Famous MMIs	3/47
Direct Temperature Rate Control Improves Reactor Yield	3/53
Model-Based Approaches to Instrument Failure Detection	3/59
Industrial Data Communications: MAP and the Process Industries	4/9
Manufacturing Automation Protocol: How Should ISA Respond?	4/9
Control Engineers Need To Learn More About Industrial Communications	4/10
An Industrial System Supplier's Perspective on the Impact of Local Area Network Standards	4/14
International Joint Ventures: Gaining Ground in the Global Market	4/16
Artificial Intelligence: Its Impact on the Process Industries	4/33
AI: Can Performance Match the Promise?	4/45
Developing An Expert System for Process Fault Detection and Analysis	4/51
Batch Reactor Control: Could An Expert Advisor Help?	4/57
North Coast Conference: Smorgasboard for the Instrumentation Professional	5/9
Is It Really Do-It-Yourself Time Again?	5/21
PC's: Moving Toward Integration	5/29
Personal Computer Monitoring System Improves Operations Economics	5/35
Local Work Station Concepts in a Small Distributed System	5/41
Expert Systems, Intelligent Devices, Plantwide Control, and Self-Tuning Algorithms: An Update on the ISA/86 Technical Program	5/69
Preview of Technical Programming at ISA/86	5/70
Electronic Data Base Searching	6/9
Wally and the Beave Automate Reactor Startups	6/27
Wave-Based Sensor Technologies: User/Vendor Harmony Improves	6/37
Scanning Electron Microscopy: A Tool for All Technologies	6/43
Liquid and Gas Process Streams Analyzed by a Single FTIR System	6/49
Online Wear-Particle Monitoring Based on Ultrasonic Detection	6/53
MAP and the Process Industries: Charting a New Course?	7/9
Industry. It's Broke. Fix It!	7/31
No Widespread Changes Noted in Safety/Reliability Instrumentation	7/45
Apply Risk Analysis to Identify and Quantify Plant Hazards	7/49
A Practical Approach to Expert Systems for Safety and Diagnostics	7/53
Chatter-Free Relief Valves	7/59
Bringing Thermography Inhouse: A Lot More Than What Meets the Eye	8/9
The Business of Instruments	8/31
Thermocouples and RTD's: A Controversy Continues	8/43
Endo/Exo Batch Reaction Requires Complex Temperature Control	8/47
Transpiration Radiometer in Fire Characterization	8/55
Thermowell Standardization	8/61
ISA/86: Hard Sell with a Soft Shell	9/11
Principles and Prospects for Continuous-Wave Ultrasonic Flowmetering	9/14
Retrofit Doesn't Necessarily Mean Upgrade	9/35
Will You Be Replaced by a Knowledge Base?	9/41
Upgrading and Retrofitting: Where the Action Is	9/51
Building Performance Indices: Raw-Data Distillation for Process Optimization	9/55
Applying PLCs and PCs in Offshore Platform Safety Shutdown Systems	9/61
Hierarchical Diagramming Communicates Control-System Design Concepts	9/67
Integrated Automation for Pulp and Paper Mills	9/73
Adapting Expert Systems to Simulation Training of Process Operators	9/79
The Expanding Use of Personal Computers in Batch Chemical Process Control	9/83
Solar Photovoltaic Power Supplies	9/87
Instrumentation '86: Emerging Technologies Secure a Foothold on the Process Plant Floor	9/203
An Industry Overview: An Informal Discussion with Dr Henry R Linden, ISA/86 Keynote Speaker	9/208
Why MAP Makes Sense for the Process Industries: An Interview with Michael A Kaminski, ISA/86 MAP Symposium Keynote Speaker	9/212
Reliability: More Materials Than Methods	10/9
Working with Our Vendors To Attack the Causes of Maintenance	10/33
Ensuring Instrument Reliability without Overkill: Where Users Draw the Line	10/37
pH Titration Curves—Trick or Treat?	10/43
Designing Fail-Safe Systems with Solid-State Instruments	10/51
Establishing Fault Tolerance in Critical Process Control	10/57
European Reflections on Advances in Process Control and Automation	11/9
Ave Atque Vale	11/23
Final Elements: Final Frontier	11/33
Non-Traditional Final Control	11/35
The Critical Flow Limit and Pressure Recovery Factor for Flow Control	11/37
Control Valve Seat Leakage	11/41
Recommended Maximum Valve Noise Levels	11/47
The Year in Review: A Report by 1986 President Thomas J Harrison	11/71
Fluid Dynamics: So Familiar, So Obscure	12/9
The Capital Spending/Process Control Instruments Enigma	12/25
Obstructionless Flowmeters: Smooth Sailing for Some, Rough Passage for Others	12/33
All-Passive Fiber-Optic Pressure Sensor	12/39
Smart Digital Pressure Transmitters for Innovative Tank Gauging	12/45
Serving Member Needs in a Changing World	12/67

AUTHOR INDEX

Author index	Month/Page
Allmendinger, G	4/45, 5/29
Ball, K E	6/43, 7/45, 8/43, 9/51, 10/9, 11/33, 12/9
Barney, F W	6/49
Barsamian, J A	3/31
Baur, P S	6/37, 7/9, 8/9, 9/11, 10/37, 11/9
Belsley, K L	12/39
Bhandara, V A	9/55
Bialkowski, W L	2/27
Blahut, N W	9/79
Blaiklock, P M	9/83
Blume, D	12/45
Borden, G	11/41
Boykin, R F	7/49
Chintappalli, P S	5/35
Cho, C H	5/69
Daily, J N	8/61
Damsker, D J	4/10
Davis, M A	10/57
Douvry, P S	8/61
Emerson, G B	2/51
Faber, D M	1/49
Fagerlund, A C	11/47
Filho, L S	9/61
Finkel, V S	9/61
Fisher, D A	2/55
Fisher, T G	10/51
Fortin, D A	4/51
Garrick, B J	7/49
Goodman, J	12/39
Gupta, R M	9/73
Harrison, T J	11/71
Hirschfeld, T	2/45
Hogley, J R	9/41
Hopper, H	10/33
Huber, D R	12/39
Kazarians, M	7/49
Korncoff, A R	9/41
Kosar, R P	9/79
Krigman, A	1/9, 1/37, 1/43, 2/7, 2/39, 3/9, 3/47, 7/31
Loflin-Beres, Lori A	9/87
Longenbaugh, Randy	8/55
Longwell, E J	8/47
Mardon, J	11/23
Marsh, C E	5/41
Mara, R	5/55
Matthews, L	5/55
McCarthy, J J	4/14
McMahon, T K	12/25
McMillan, G K	1/55, 3/53, 6/27, 10/43
Myers, J	12/45
Nisenfeld, A E	4/57, 5/21
Nemarich, C P	6/53

Author index	Month/Page
Nordling, D A	6/53
O'Donnell-Leach, D	6/49
Paradis, R L	9/55
Rahmeyer, W	11/37
Rajaram, N S	4/33
Redding, R J	9/14
Rivera, P	7/57
Robinson, C	1/71, 4/16, 5/9, 6/9, 9/203, 12/33
Rodriguez, G	7/53
Saxena, A C	9/55
Shirley, R S	4/51
Steely, R K	5/35
Taylor, D W	6/53
Theisen, T J	7/59
Tompkins, B G	9/67
Tucker, T W	5/41
Tulumello, A	8/31
Turk, MA	4/57, 9/35
Tylee, J L	3/59
Verna, J R	11/35
Vidrine, W	6/49
Weidman, W C	2/55
Weiss, V S	12/67
Wendt, R E	11/35
Whitsel, H K	6/53
Williams, T J	4/9
Zinck, L	11/41

TOPIC INDEX

Topic index	Month/Page
acid/base neutralization	10/43
acoustic flowmeters	12/33
adaptive control	1/9
advanced control	1/43
alarms	7/45, 10/51
analytical instruments	2/7, 5/9
analyzers	2/7
artificial intelligence (AI)	4/33, 4/45, 4/51, 4/57, 9/79, 9/203
Autofact '86	12/9
availability	10/37, 10/57
batch process control	1/9, 3/47, 4/57, 8/47, 9/83
batch processing	1/49, 3/9
batch temperature control	8/47
boiler feedwater control	2/55
cage-guided trim	2/55
cascade control	8/49
cavitation	11/37
cell controllers	8/28
chart recorders	11/20
Chernobyl, nuclear accident	10/12
chromatographs	2/39
chromatography	2/45
combustion optimization	2/9
composition analyzers	2/39, 2/45
computer control	3/31
continuous processing	1/49
control algorithms	1/55
control system engineering	2/27
control systems	10/37
control valve operation	2/55
control valve seat leakage	11/41
control valve service	11/41
control valve spec/selection	11/41
control valves	2/55, 11/33, 11/41
converters (A/D, D/A), market	9/32
Corioiis mass flowmeters	12/33
critical flow flashing	11/37
data base searching	6/9
dead time	1/55
diagram, control system	9/67
distillation process	9/55
distributed control networks	9/73
distributed control systems	9/73
distributed control	1/43, 9/73, 9/203, 10/57
documentation, project	9/67
electro-optics	9/203
electromechanical relays	10/51
electron microscopy	6/37
electronic data base searching	6/9
endothermic/exothermic reactions	8/47
error detection	3/59
event recording	9/61
event tree	7/49
exothermic batch processing	3/53
expert systems	4/33, 4/45, 4/51, 4/57, 5/9, 7/53, 9/79, 9/203
Fabry-Perot interferometric sensor	12/39
fail safe	10/51
failure analysis	4/51, 6/43, 7/53, 10/37
failure detection	3/59, 4/51
fault analysis	2/45
fault detection	4/51
fault tolerance	1/43, 10/37, 10/57
fault trees	7/45, 7/49, 7/53, 10/37
feasibility studies	3/31
fed-batch processing	3/9
fiber optics	2/45, 6/25, 6/37, 9/203, 12/39
final control elements	11/33, 11/35
fire, gas detection	9/61
Flomeko '85	12/9
flow control	11/35
flow measurement	12/33
flow metering	9/14, 12/33
flowmeters	12/33
fluid dynamics	12/9
fluorescence spectroscopy	2/45
Fourier transform signal handling	6/49
gas analysis	2/7
gas chromatography	2/7
graphic displays	3/47
heat flux gages	8/55
hierarchical diagramming	9/67
hydraulic system	6/53
infrared analysis	6/37, 6/49
infrared spectroscopy	6/49
infrared temperature detection	8/9
installation costs	1/43
instrument integrity	3/59
instrument maintenance	2/39
instrument market	8/31
international joint ventures	4/16
Interkama 86	11/9
ISA Annual Report	10/68
ISA/86	9/11, 9/203
joint ventures	4/16
Kalman filters	3/59
keyboards	3/47
Klinger research prize	10/20
knowledge bases	7/53, 9/43
knowledge-based processing	4/45
lasers	6/37
level control	12/45
light pens	3/47
Linden, H R	9/208
local area networks	4/9, 4/30, 7/9
local workstation	5/41
loop performance	1/55
lubrication system	6/53
magnetic flowmeters	12/33
maintenance	1/43, 2/39, 8/9, 10/33, 10/37
man-machine interfaces	3/47
Manufacturing Automation Protocol (MAP)	4/9, 4/30, 7/9, 9/203, 9/212, 11/20
market studies, instrumentation	8/31, 9/32, 12/9, 12/25
microcomputers	5/29
minerals processing	2/7
modeling	3/59
mouse input	3/47
near infrared spectroscopy	2/45
nonintrusive flowmeters	12/33
obstructionless flowmeters	12/33
offshore platforms	9/61
on-line analyzers	5/9
on-line data base searching	6/9
on-stream analyzers	2/7, 2/39, 2/45
operator consoles	3/47
operator decision support	4/57
operator interfaces	1/43, 1/49, 5/41, 9/83, 9/203
operator training	9/79
optical analyzers	6/37, 8/28
optical pressure sensor	12/39
optimization	1/43, 9/55
optrodes	2/45
organic process analysis	6/49
performance index	9/55
personal computer software	9/11
personal computers	5/21, 5/29, 5/35, 5/41, 9/61, 9/83
pH control	10/43
pH electrodes	1/30
photovoltaic power	9/87
pIon electrodes	1/30
PID controllers	1/55
PID loops	1/43
pipe noise	11/47
PLCs	1/49, 9/61, 10/51
pollution abatement	2/7
portable analyzers	5/9
pressure recovery factor	11/37
pressure relief valves	2/51
pressure sensors, market	10/29
process computers	1/9, 3/31
process control automation	3/31
programmable logic controllers	1/49, 9/61, 10/51
programming	5/29
pulp/paper control	9/73
pumps, centrifugal	11/35
pumps, variable-speed	11/35
Queen Elizabeth II (ship)	10/10
radiative heat flux	8/55
reactor startups	6/27
recorders, chart	11/20
redundancy	1/43, 10/37, 10/51
reliability	1/43, 3/59, 7/53, 10/9, 10/37, 10/57
relief valves	2/51, 7/59
remote instrumentation	9/87
resistance temperature detectors	8/43
retrofit	9/35
risk assessment	7/45, 7/49
robotics directory	9/30
safety valves	7/59
safety	2/51, 7/45, 9/61, 10/51
sampling systems	6/49
scanning electron microscopy	6/43
self-diagnostics	1/43
self-tuning	1/9, 1/43
self-tuning controllers	1/9
shutdown systems	9/61, 10/51
simulation training	9/79
small business research	10/16
software	9/11, 9/43
software development	1/49, 5/29
solar power	9/87
standards, temperature	8/61
strip chart recorders	11/20
surface analysis	6/43
tank gauging	12/45
technology transfer	1/75, 4/16
temperature control	3/53
temperature rate control	3/53
temperature sensors	8/28, 8/43
thermocouples	8/43
thermography	8/9, 8/43
thermometer, optical fiber	8/28
thermowell standards	8/61
thermowells	8/61
titration	10/43
touch screens	3/47
transient errors	10/37, 10/51
transpiration heat flux gage	8/55
transpiration radiometer	8/55
tuning	1/55, 3/53
ultrasonic flow measurement	9/14
ultrasonic flowmeters	12/33
ultrasonic particle sensor	6/53
ultrasonics	6/37, 6/53
ultraviolet analysis	6/37
upgrading instrumentation	9/35, 9/51, 10/10
user interfaces	5/9, 9/203
valve chatter	7/59
valve noise	11/47
valves	2/51, 2/55, 11/37
valves, market	12/10
vibration, piping/valves	11/47
voice input	3/47
water treatment	10/43
wear particle	6/53
workstations	5/41
x-ray microprobes	6/43